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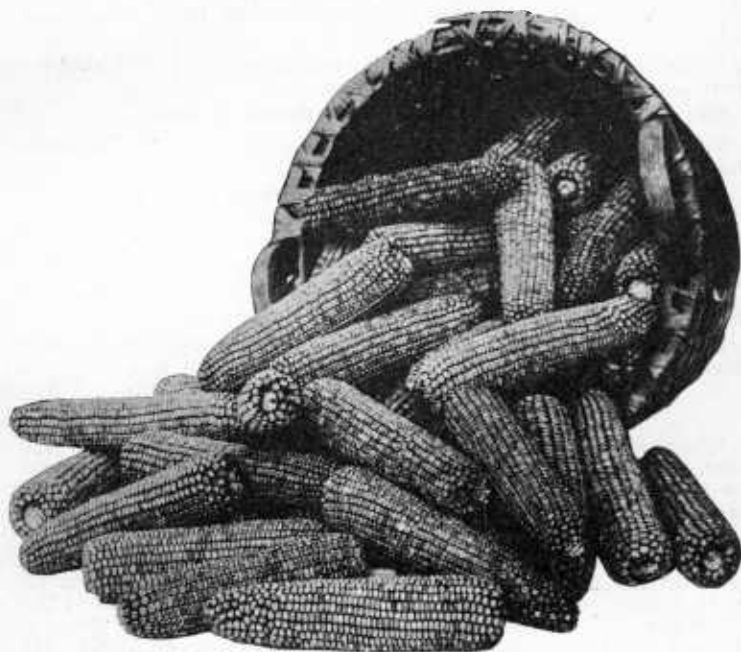
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SEED CORN

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SELECTION OF SEED CORN.

S EED CORN SHOULD BE SELECTED FROM STALKS STANDING WHERE THEY GREW, BECAUSE ONLY THEN WITH CERTAINTY CAN SEED BE OBTAINED FROM—

Stalks that have an inherent tendency to yield well as shown by their superiority over surrounding stalks that grew under the same conditions. (Such seed inherits high producing power.)

Stalks without suckers. (Such seed produces fewer suckers than seed from sucker-bearing stalks.)

Storm-proof stalks with ears at a desirable height.

SEED CORN SHOULD BE SELECTED AS SOON AS IT MATURES, BECAUSE—

Desirable stalks, especially early-maturing stalks with hanging ears, are then most easily found.

Freezing weather injures the seed before it becomes dry.

Warm, wet weather may cause kernels to sprout before drying.

If the selection is delayed in the South the ears may become infested with weevils, grain moths, and their eggs.

It is as easy, more satisfactory, and much more profitable than selecting from cribs in the spring.

CARE OF SEED CORN.

Where corn grew wild there was a dry season in place of our winter. Each kernel contains a tender living corn plant. Upon the treatment given this plant depends the size and number of ears it will produce.

Many tests of two lots of seed alike when gathered, one promptly dried and kept dry during winter, the other cribbed, have proved that well-preserved seed will yield from a few up to 18 bushels an acre more than crib seed. In the case of the 18 bushels increase, both lots germinated equally well. The increased yield was due entirely to prompt drying and better care during winter.

Good care means early gathering, prompt drying immediately after gathering, and keeping constantly dry and safe from rats, mice, and insects.

VALUE OF SEED CORN.

Seed corn that comes up but produces an unprofitable crop is worth less than seed that will not grow at all, because a greater amount of labor and the use of the land are lost. The seed corn that produces the best crop is the cheapest.

Begrudge not your neighbor a good price for properly selected and dried seed of a variety which has made good in the neighborhood, but avoid paying the stranger a fancy price for seed said to give fabulous yields.

SEED CORN.

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SMALL YIELDS DUE TO POOR SEED CORN CAN BE PREVENTED.

The average production of corn to the acre for the entire United States is but 26 bushels, yet in practically every section four times that quantity is frequently produced. Improvement of the quality of seed is the least expensive method of increasing the yield per acre.

There is each spring a scarcity of good seed corn. This condition is all the more regrettable because it need not exist, and it is much more serious than commonly supposed because many do not fully realize the tremendous loss to themselves and the country due to planting inferior seed. A full stand of plants may be obtained from inferior seed, but the yield will not be the best possible.

The loss is due to delay or negligence. *It can be prevented by the selection of seed corn in the autumn.* If good seed corn could be manufactured in a few weeks' time many factories would be working day and night from March till June. Each spring the writer regrets the unfortunate position of many thousands who too late inform the United States Department of Agriculture of their willingness to pay good prices for good seed corn and of their inability to obtain it.

THE VERY BEST SEED IS AVAILABLE AT RIPENING TIME.

Autumn is the time to prepare for a profitable corn crop the following season. It is hoped that this bulletin will prove more valuable and timely than any replies that can be written to springtime correspondents regarding seed corn. Its object is to prevent the scarcity

each spring of first-class seed corn. This scarcity can be prevented by selecting the seed when it is most abundant and when the very best can be obtained—at ripening time before it has been in any way reduced in vitality. Many let this opportunity pass, expecting to purchase their seed corn, only to find that they can not buy at any price in the winter or spring as good seed as they could have selected in the autumn.

WHERE TO OBTAIN THE BEST POSSIBLE SEED CORN.

Until a community has its experienced and honest corn breeder, the best place for the farmer to obtain seed corn is from fields on his farm or in his neighborhood that were planted with a variety that has generally proved most successful in that locality.

CORN BREEDING IS A SPECIAL LINE OF WORK.

Well-conducted corn breeding requires special methods that general farmers have not time to apply. If there is in your locality a corn breeder who each year demonstrates the superiority of his corn, you should pay him well for his superior seed. Five dollars a bushel will be a profitable bargain for both parties. Such corn breeders are improving corn as cattle breeders have improved cattle.

The general farmer is a propagator rather than a breeder of corn. He profits by the careful work of the breeder by adopting the higher yielding strains and propagating them.¹

WHAT CONSTITUTES GOOD SEED CORN?

By far too many consider seed good simply because it will grow. To be first class, seed must be—

(1) Well adapted to the seasonal and soil conditions where it is to be planted.

(2) Grown on productive plants of a productive variety.

(3) Well matured, and preserved from ripening time till planting time in a manner that will retain its full productivity.

The importance of the three requirements just enumerated has been demonstrated experimentally by the Office of Corn Investigations of the Bureau of Plant Industry. The results given briefly, as enumerated, are as follows:

(1) For a series of five years 12 well-bred varieties were tested in 10 Northern States, equivalent lots of seed being used in each State. Varieties that produced most in some States were among the poorest in other States.

¹ Those especially interested in the improvement of corn by methods of breeding can receive detailed information upon application to the Secretary of Agriculture.

(2) Seed ears taken from the highest-yielding rows of ear-to-row breeding plats have repeatedly produced better than seed ears taken from poorer-yielding rows. Seed ears from the best-producing stalks found in a general field produced more than seed ears taken without considering the productiveness of the parent stalks.

(3) Four hundred ears were divided into two equal parts, one part being well taken care of and the other placed in a barn as corn is ordinarily cribbed. The well-preserved seed gave a yield on poor soil 12 per cent higher than the poorly preserved and 27 per cent higher on fertile soil, notwithstanding the fact that both lots of seed germinated equally well.¹

HOW TO GATHER SEED CORN.

MAKE SEED-CORN GATHERING A SPECIAL TASK.

At corn-ripening time drop all other business and select *an abundance* of seed corn. The process is too important to be conducted incidentally while husking. When selecting seed corn give the process your entire attention. Get the very best that is to be had and preserve it well, and your increased yields will return you more profit than any other work you can do on your farm.

The only proper way to select seed corn is from the stalks standing where they grew, as soon as ripe and before the first hard freeze.

PROPAGATE ONLY FROM THE BEST-PRODUCING PLANTS.

As soon as the crop matures, go through the field with a seed-picking bag (fig. 1)² and husk the ears from the stalks that have produced the most corn without having any special advantages, such as space, moisture, or fertility. Avoid the large ears on stalks standing singly with an unusual amount of space around them. Preference should be given the plants that have produced most heavily in competition with a full stand of less productive plants.

In all localities the inherent tendency of the plant to produce heavily of sound, dry, shelled corn is of most importance.

Late-maturing plants with ears which are heavy because of an excessive amount of sap should be ignored. Sappiness greatly increases the harvest size and weight and is apt to destroy the quality.

In the Central and Southern States, all other things being equal, short, thick stalks are preferable. Short stalks are not so easily blown down and permit thicker planting. Thick stalks are not so easily broken down and in general are more productive than slender ones.

¹ See Yearbook, U. S. Dept. of Agriculture, for 1902, p. 550.

² The seed-corn picking bags shown in figure 1 are always open for filling and may be instantly opened at the bottom for emptying.

The tendency for corn to produce suckers is hereditary.¹ Other things being equal, seed should be taken from stalks that have no suckers.

TREATMENT OF SEED IMMEDIATELY AFTER GATHERING.

The same day seed corn is gathered the husked ears should be put in a dry place where there is free circulation of air, and placed in such a manner that the ears do not touch each other. This is the only safe procedure. The writer has repeatedly seen good seed ruined



FIG. 1.—A field of corn showing a good method of selecting seed. The men are searching for plants that have produced heavily under average conditions and in close competition with less productive plants in the same and adjacent hills.

because it was thought to be already dry enough when gathered and that the precaution mentioned above was unnecessary. Many farmers believe that their autumns are so dry that such care is superfluous. Seed corn in every locality gathered at ripening time will be benefited by drying as suggested. If left in the husk long after ripening it may sprout or mildew during warm, wet weather or become infested with weevils or grain moths, or their eggs.

The vitality of seed is often reduced by leaving it in a sack or in a pile for even a day after gathering. During warm weather, with some moisture in the cobs and kernels, the ears heat or mildew in a remarkably short time.

¹ See Report, American Breeders' Association, vol. 2, 1906, p. 144.

The best possible treatment immediately after gathering is shown in figure 2. Binder twine will support 15 or 20 ears on a string, arranged in the manner illustrated. Ordinarily the best place to hang these strings of ears is in an open shed or loft.

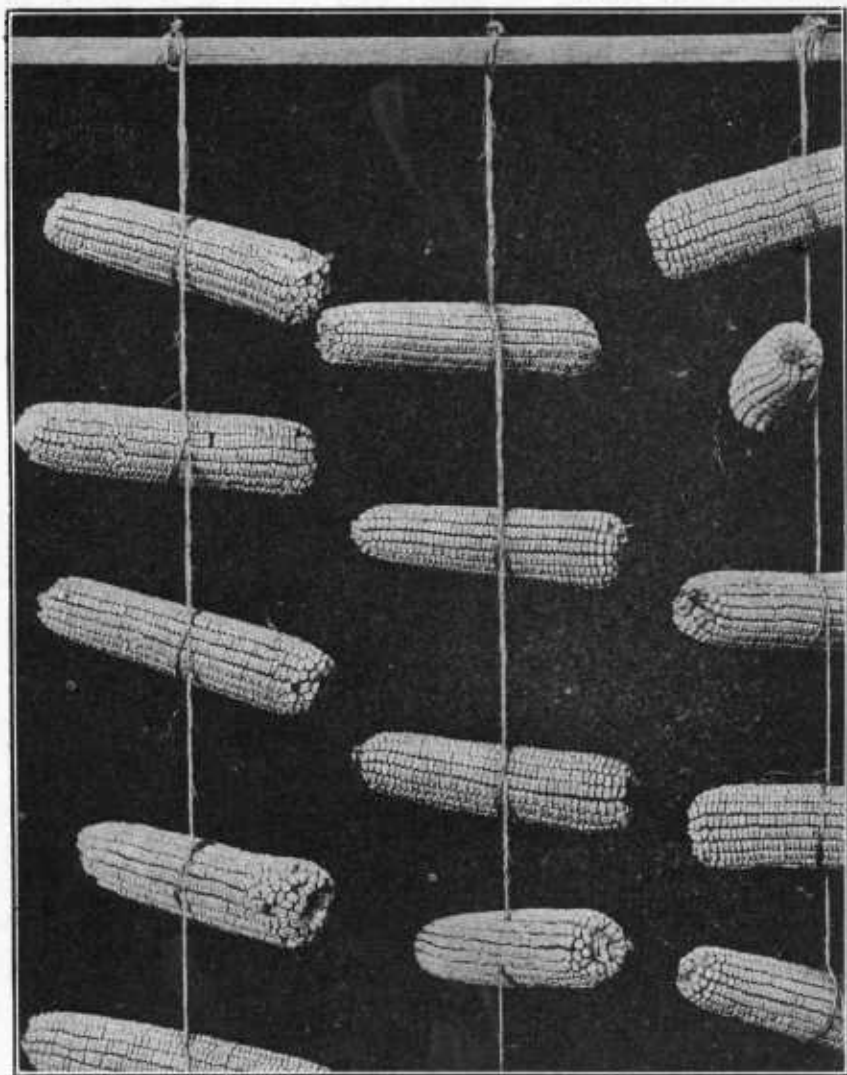


FIG. 2.—An ideal method of treating seed ears, stringing them immediately after they are gathered and hanging them in a breezy place.

Wire racks, like the one shown in figure 3, are more convenient and in the end cheaper than binder twine. Credit for the idea of making such racks from electrically welded lawn fencing is due to a

seed-corn company. The cutting of the fencing into seed-corn racks without any waste is shown in figure 4.

Fencing with horizontal wires 4 inches apart and upright wires 2 inches apart may be obtained in widths of 2, 3, and 4 feet. All dealers in wire fencing can supply such fencing to farmers at an initial cost of about 10 cents for each bushel of seed suspended.

These racks will last many years and are easily stored when not in use.

Permanent seed racks (fig. 5) are convenient, and when they are located in a dry, breezy place the ears dry successfully.

Only during unusually damp weather at seed-gathering time will fire be necessary. If heat is employed in a poorly ventilated room it will do the seed ears more injury than good. If used, the fire should be slow, long continued, and situated below the seed ears, with good ventilation above them.



FIG. 3.—Seed ears suspended by means of wire racks made from electrically welded fencing. Figure 4 shows how to make these racks.

DESTROYING WEEVILS OR GRAIN MOTHS.

If at any time signs of weevils or grain moths show on the corn, it should be inclosed with carbon bisulphid in practically air-tight rooms, bins, boxes, or barrels for 48 hours. The bisulphid should be placed in shallow dishes or pans on top of the seed. One-half pint is sufficient for a box or barrel holding 10 bushels or less. One pound, costing about 30 cents, is sufficient for a room or bin 10 feet each way.

After fumigation the ears must be thoroughly aired, taking care that no fire is present when the fumigating box is opened.

WINTER STORAGE OF SEED CORN.

After hanging in the shed or lying on the racks for two months, the seed ears should be "dry as a bone" and contain less than 10 per cent of moisture. They can remain where they dried or be stored in mouseproof barrels, boxes, or crates (fig. 4) during the winter, but in either case must not be exposed to a damp atmosphere, or they will absorb moisture and be injured. Some farmers place the thoroughly dried seed ears in the center of a wheat bin and fill the bin with loose, dry wheat. This protects the ears from rats and mice.

PREVENTING INJURY FROM WEEVILS AND GRAIN MOTHS.

In localities where weevils and grain moths injure stored grain, the thoroughly dry seed ears should be stored in very tight mouse-proof

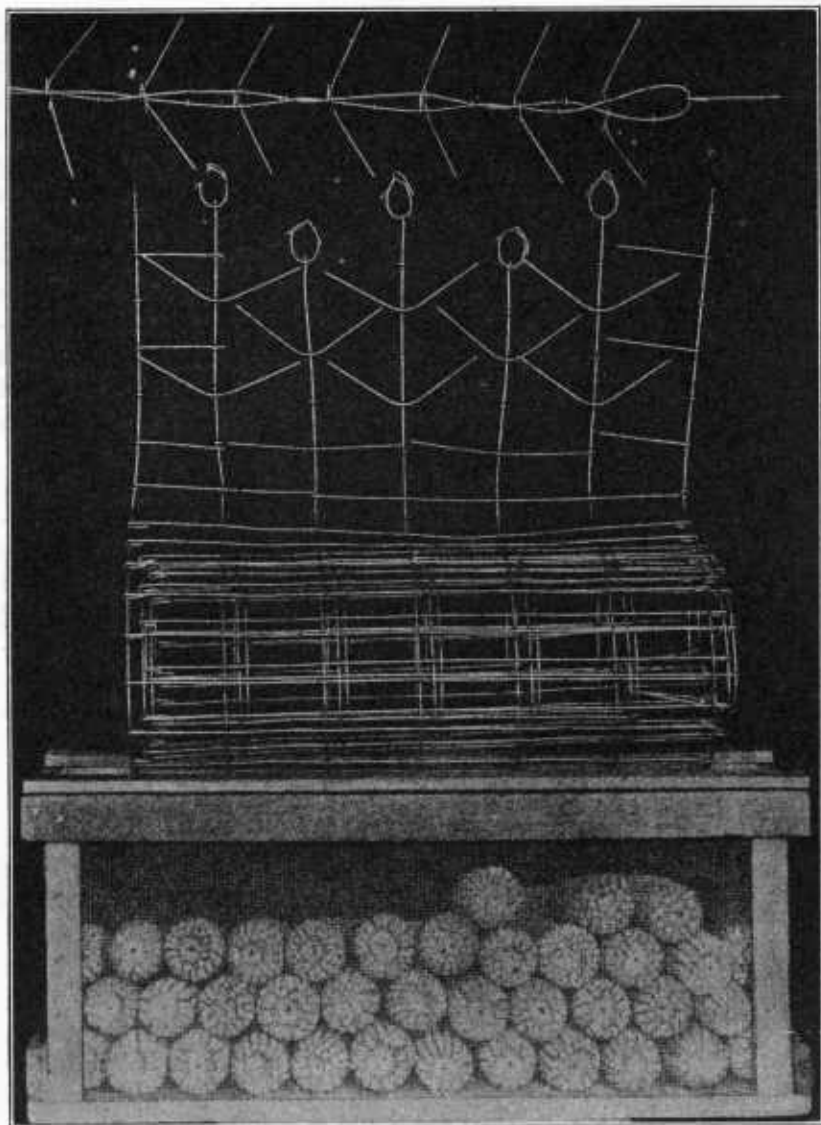


FIG. 4.—Seed-corn racks made from electrically welded wire fencing, showing the method of construction ; also a mouse-proof crate for storing seed corn in winter.

receptacles, with 1 pound of moth balls or naphthalene inclosed for each bushel of corn. This quantity tightly inclosed with the corn will prevent damage from these insects and will not injure the seed.

The material will cost about 6 cents a pound. Sixty cents' worth will protect seed enough to plant 60 acres.

TESTING THE GERMINATION OF SEED CORN.

Seed corn that matured normally and has been properly preserved will grow satisfactorily. It is very poor management to neglect

proper preservation and to spend time in the spring separating by germinating tests those ears that have been badly damaged from those that have been slightly damaged. Prevention is better than cure, and in this case a cure is impossible.

Ears slightly damaged by poor preservation may germinate 100 per cent, but will produce less than if they had received better care.

Make a seed-corn testing box and test 100 ears separately. Be sure that each kernel tested is perfect in appearance and was not injured at the tip when removed from the ear. If 3 or more kernels out of 10 from any ear fail to grow, it will be advisable to

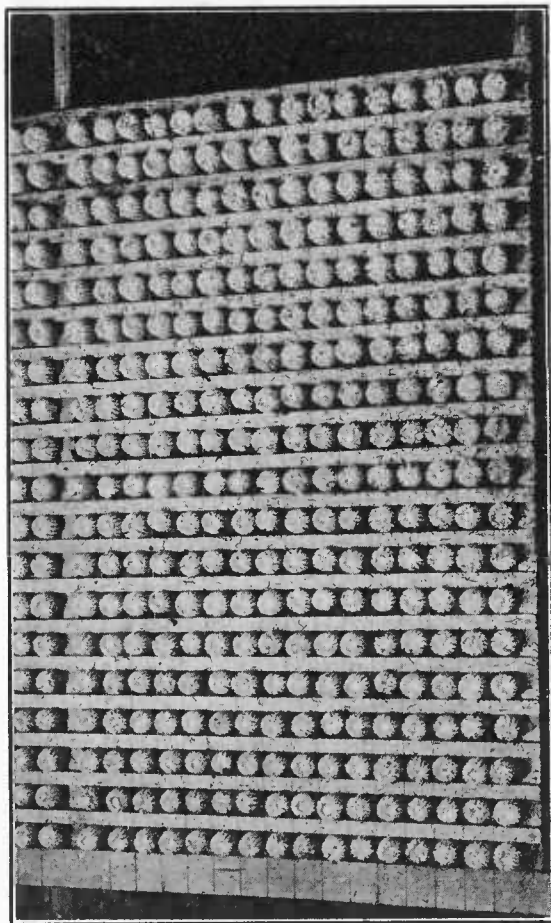


FIG. 5.—A good rack for drying seed corn.

test every ear in the entire supply of seed corn. If the seed has been properly selected and preserved the 100 ears tested will seldom reveal any poor ones and further testing of the supply will usually be unnecessary.

GRADING SEED CORN.

Shelled corn is difficult to grade satisfactorily. The grading can be done better before the ears are shelled. If the seed ears vary

greatly as to size of kernel they should be separated into two or three grades according to size of kernel. These grades should be shelled separately, tested in the corn planter, and numbered to correspond with the number on the planter plates that are found to drop them most uniformly. These arrangements can be completed before the rush of spring work begins.

METHOD OF SHELLING.

SEED EARS SHOULD FIRST BE NUBBED.

The first operation in properly shelling seed corn is the removal of the small kernels from the tips of the ears and the round thick kernels from the butts. The former are less productive than the other kernels of the ear. The round butt kernels are as productive as the other kernels of the ear, but do not plant uniformly in a planter.

HAND SHELLING IS THE BEST METHOD.

Shelling seed corn carefully by hand is profitable. The greater the acreage planted the greater the profit. Into a shallow sieve each ear should be shelled separately, rejecting any worm-eaten or blemished kernels. If the supply from the one ear appears good and contains no poor kernels, it is poured into the general supply and another ear shelled in the same way.

SUMMARY.

If you have ever found yourself compelled to plant corn that was not fit for seed, do not be caught that way again. It is too discouraging to begin the season with poor prospects of a good crop. Get your seed at ripening time when the best quality is most plentiful. Get an abundance, enough for planting again what the high water may destroy and for holding over a supply to prevent losing seed of a good adapted variety in case hail, drought, or frost should ruin the local crop.

Save seed only from the most profitable individual stalks with the same care you use in propagating your animals.

Care for each living kernel from the time it ripens until it is planted in a manner that will enable it to develop into a thrifty plant and produce one or more large ears. Do not expect germination tests made in the spring to restore vigor that proper gathering, drying, and storing would have retained.

Shell your seed carefully by hand.

